

### REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion is respectfully requested.

Claims 1-21 are currently pending in the application; Claims 1-14 are allowed, and Claim 15 is amended by the present amendment. Support for amended Claim 15 can be found in the original specification, claims and drawings.<sup>1</sup> Thus, no new matter is presented.

In the outstanding Official Action, Claims 15-21 were rejected under 35 U.S.C. § 103(a) as unpatentable over Hamilton-Piercy et al. (U.S. Patent No. 5,802,173, hereinafter “HP”) in view of Johnson et al. (U.S. Patent No. 6,497,599); and Claims 1-14 were indicated as allowed. Applicants acknowledge with appreciation the allowance of Claims 1-14.

Applicants respectfully submit that amended independent Claim 15 states novel features clearly not taught or rendered obvious by the applied reference.

By way of background, conventional mobile communication systems include a plurality of wireless base stations and a control station for controlling the wireless base stations. These wireless base stations and the control station are connected using switching apparatuses and wireless and/or optical fiber circuits. In order to transmit signals via the optical or wireless transmission part, the switching apparatus must convert a signal into a signal which is suitable for the respective transmission medium (optical or wireless). Thus, it is necessary to add or change the radio transceiver unit (RTRU) or the optical transceiver unit (OTRU) in a conventional switching apparatus when the transmission medium is added or changed. Such a configuration makes the dynamic design of a network difficult.

In light of these above-noted shortcomings, the present claims are presented. In order to expedite prosecution of the present application, Claim 15 is amended to recite a switching apparatus in each of a base station and control station in a mobile communication system,

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<sup>1</sup> Specification at Figure 2.

which is configured to receive and demodulate optical signals and wireless signals of a ***unified transmission form suitable for transmission through a wireless circuit and an optical fiber circuit.*** The switching apparatus includes a wireless signal receiving part and an optical signal receiving part, which are configured to receive the signal of a unified transmission form via a wireless circuit and a optical fiber circuit, respectively. Further, the switching apparatus includes a demodulating part which demodulates the signal of a unified transmission form when received via the wireless circuit or optical fiber circuit. Therefore, no additional RTRU or OTRU are needed because the signal is modulated into a unified transmission form by a modulation part which similarly modulates the signal for transmission by both the optical and fiber transmission parts.

Amended Claim 1 recites, *inter alia* a mobile communication system, said switching apparatus in a sending side comprising:

...a wireless signal receiving part configured to receive a first signal ***of a unified transmission form suitable for transmission through a wireless circuit and an optical fiber circuit via a wireless circuit;***  
an optical signal receiving part configured to receive a first signal of a unified transmission form... and  
a demodulation part configured to demodulate said first signal ... when received by the wireless signal receiving part and also when received by the optical receiving part.

Turning to the applied reference, HP describes a radiotelephony system including a plurality of base stations and control stations, each including a switching apparatus.<sup>2</sup> HP also describes that the switches of the control system include a wireless signal receiving part (e.g. Figs. 4-5) and an optical signal receiving part (e.g. Fig. 2) configured to receive a wireless or optical signal from the base station. A demodulator is also provided to demodulate the received wireless and optical signals.

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<sup>2</sup> HP at col. 10, lines 34-57, and Fig. 1.

However, HP fails to teach or suggest a demodulation part configured to demodulate the first signal of *a unified transmission form when received by the wireless signal receiving part and also when received by the optical receiving part*, as recited in amended Claim 15. In contrast, HP describes that different demodulators are used to demodulate the signals received over the optical fiber circuit and the wireless circuit, respectively.

Specifically, the base station includes Radio Base Station Microcell Optical Equipment (RBSMOE 236), depicted in Fig. 6, which is configured to receive and demodulate optical signals modulated by direct amplitude modulation or frequency modulation of the optical carrier.<sup>3</sup> The RBSMOE includes translators (376, 414, 415, 416) configured to process the optical signals. HP further describes that wireless links may be established between the transceiver units (base station) and the switching network, however the RF system used to receive, transmit and demodulate such signals is completely independent in structure and function from the RBSMOE, discussed above.<sup>4</sup> The wireless signals are conditioned by the circuit depicted in Fig. 5 and use translators (56, 78, 79, 80) to demodulate the signal. Thus, demodulators which are distinct in both form and function are used in HP's system to demodulate the optical and wireless signals, respectively.

Therefore, HP's system does not include a demodulation part configured to demodulate a first signal of *a unified transmission form when received by the wireless signal receiving part and an optical receiving part*, which is a feature recited in amended Claim 15.

Further HP fails to teach or suggest a wireless signal receiving part or an optical signal receiving part configured to receive a first signal of *a unified transmission form suitable for transmission through a wireless circuit and an optical fiber circuit*, as recited in amended Claim 15. As discussed above, HP describes that the methods and corresponding

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<sup>3</sup> HP at col. 13, lines 10-41.

<sup>4</sup> HP at col. 20, lines 54-43.

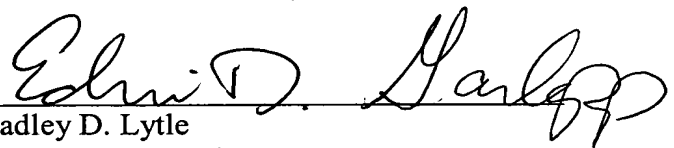
devices used to transmit, receive and demodulate the wireless and optical signals are distinct and therefore the optical and wireless signals are clearly not of *a unified transmission form*. Specifically, as discussed above, HP describes that multiple translators (56, 78, 79, 80) are provided to process a wireless signal, while the optical signal is conditioned by the circuit depicted in Fig. 6, including translators (376, 414, 415, 416) configured to process the optical signals.<sup>5</sup> Therefore, in HP, the wireless signal receiving part and optical signal receiving part receive signals which are not of *a unified transmission form suitable for transmission through a wireless circuit and an optical fiber circuit*.

Accordingly, Applicant respectfully requests the rejection of Claims 15-21 under 35 U.S.C. § 102 be withdrawn. For substantially the same reasons as given with respect to amended Claim 15, it is also submitted that Claims 16-21 patentably define over HP.

Consequently, in view of the present amendment and in light of the foregoing comments, it is respectfully submitted that the invention defined by Claims 1-21 is patentably distinguishing over the applied references. The present application is therefore believed to be in condition for a formal allowance and an early and favorable reconsideration of the application is therefore requested.

Respectfully submitted,

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<sup>5</sup> HP at col. 20, lines 63-65, and col. 22, lines 58-61.